PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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To:
100011
22/F,Great Eagle Centre, 23 Harbour
Road,Wanchai,HONG KONG,P.R.China
CHINA PATENT AGENT(H.K.) LTD
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<h1>PCT</h1>
WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY

(PCT Rule 43 <i>bis</i>.1)
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Date of mailing (day/month/year)	2006 (0 2 · 1 1 · 2 0 0 6)

Applicant's or agent's file reference	FOR FURTHER ACTION
FPEL05150074	see paragraph 2 below

International application No.	International filing date (*day/month/year*)	Priority date (*day/month/year*)
PCT/CN2005/002403	30. Dec 2005 （30.12.2005）	

International Patent Classification (IPC) or both national classification and IPC

G06F9/445(2006.01)i

Applicant
INTEL CORPORATION et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I   Basis of the opinion
- ☐ Box No.II   Priority
- ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV   Lack of unity of invention
- ☒ Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i)with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No.VI   Certain documents cited
- ☐ Box No. VII   Certain defects in the international application
- ☐ Box No.VIII   Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN	Date of completion of this opinion	Authorized officer
The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	28.Sep 2006 （28.09.2006）	ZHAO,Weihua 华赵 印伟 Telephone No. (86-10)62085024

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY	International application No. PCT/CN2005/002403

Box No. I   Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

    ☒   the international application in the language in which it was filed
    ☐   a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

    a.   type of material
        ☐   a sequence listing
        ☐   table(s) related to the sequence listing

    b.   format of material
        ☐   on paper
        ☐   in electronic form

    c.   time of filing/furnishing
        ☐   contained in the international application as filed
        ☐   filed together with the international application in electronic form
        ☐   furnished subsequently to this Authority for the purposes of search

3. ☐   In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4.   Additional comments:

Box No. V	Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement:

		Claims		
Novelty (N)		Claims	1-30	YES
		Claims		NO
Inventive step (IS)		Claims	1-30	YES
		Claims		NO
Industrial applicability (IA)		Claims	1-30	YES
		Claims		NO

2. Citations and explanations

(1) Reference is made to the following documents:

D1:CN1282914A   (IBM [US])   7 Feb 2001   (2001-02-07)
D2:US5847953A   (NAT INSTR CORP [US])   8 Dec 1998   (1998-12-08)
D3:US5978581A   (ELECTRONIC DATA SYST CORP [US])   2 Nov 1999   (1999-11-02)
D4:WO0157656A2   (INSIGNIA SOLUTIONS PLC [GB]; DARNELL STEPHEN [GB])   9 Aug 2001   (2001-08-09)

(2) The subject matter of claims 1-30 of the present invention is a technique solution of type checking between an object class and a target class.

(3) D1 discloses an introspective editor system, program, and method for software translation using a facade class. A system, method, and program for providing language translators with contextual information for the text to be translated. The translator is presented with a graphical user interface in the base language, and can then interactively translate each text label on the screen. Because the translation is performed on the text in the proper context, the time and expense of Translation Verification Testing is reduced or eliminated. The contextual presentation of the text is accomplished by creating a "facade" class that includes Java J Components and adds additional attributes to each member component. The additional attributes include the Java resource bundle name and key for each J Component.

D2 discloses a system and method for performing class checking of objects in a graphical data flow program. A system and method for creating a program for controlling an instrument independent of the interface type of the instrument, in a graphical programming environment. The system comprises a computer system including a display screen and input device, an instrument coupled to the computer system, and a graphical programming environment for creating and executing programs to control the instrument.

D3 discloses an object-oriented code generation system and method. One aspect of the invention is a method of generating object-oriented code. An object model is captured for at least one object using a computer. Code interpretable by a compiler is then generated based upon the object model. The code comprises a base object class (46) and a custom object class (50) where the base object class (46) comprises a base object header file and base object implementation file while the custom object class (50) comprises a custom object header file and custom object implementation file.

D4 discloses a reduced size object header. A method and apparatus for reducing memory requirements in a computing environment. The method includes reducing the size of a header for a data structure by creating a header consisting of index information. Alternatively, the header may also include garbage collection information. The invention also provides a data structure for an object-oriented programming environment. The data structure includes: 1) a header consisting of index information and 2) one or more fields. Unlike prior data structures the header does not include information regarding the data structure's size; where it references are; it dispatch table; hash code information; or monitor information.

(4) The present invention is a technique solution for type checking between an object class and a target class. It comprise getting an object header from an object and checking from the object header by a hotspot in the first time type checking. It is obvious that not all the technical features in claims 1,7,12 and 22 are disclosed by D1~D4, so the subject matters of claims 1,7,12 and 22 are therefore new (Article 33(2) PCT). And it is also obvious that not all the technical features in claims 1,7,12 and 22 are disclosed by D1~D4 and further the technical solutions claimed are not obvious to a person skilled in the art on the basis of D1~D4 or their combinations.Thus, claims 1,7,12 and 22 have inventive step under PCT Article 33(3). Claims 2-6,8-13,15-21,23-30 are dependent on claims 1,7,14,22 and as such also meet the requirements of the PCT with respect to novelty and inventive step. Claims 1-30 have industrial applicability under PCT Article 33(4), because the subject matter of the present invention is a technique solution for type checking of an object in Java vertual machine.